

Notice of Allowability	Application No.	Applicant(s)	
	09/518,399	SULTAN, ISRAEL DANIEL	
	Examiner	Art Unit	
	Ponnoreay Pich	2135	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/20/2005.
2. ☒ The allowed claim(s) is/are 1-12, 14-15, and 17-21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Claims 1-12, 14-15, and 17-21 have been examined.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Cesarano on 12/30/2005.

The application has been amended as follows:

IN THE CLAIMS, PLEASE REPLACE CLAIMS 1-12, 18-19 AS FOLLOW:

Claim 1:

A network address translating ("NAT") gateway for detecting datagrams having process-specific nontranslatable port addresses and passing said datagrams through the NAT gateway without translating their port addresses, said NAT gateway connecting a LAN to an external network, said LAN using local IP addresses said NAT gateway having a local IP address that can be referenced by devices on said LAN and having an external IP address that can be referenced by devices on said external network, said NAT gateway comprising:

said NAT gateway having a plurality of internal tables associating combinations of local IP addresses of local devices on said LAN, external IP addresses of external devices on said external network, security parameter index ("SPI") - In values, SPI - Out

values, source port addresses, destination port addresses, and process-specific port addresses;

said NAT gateway maintaining a list of selected process-specific nontranslatable port addresses to which datagrams can be passed without translating their port addresses;

means for performing normal address translation upon datagrams passing from said LAN to said external network and datagrams passing from said external network to said LAN;

means for delivering a datagram from a local device on said LAN to an external device on said external network by receiving a datagram from a local device on said LAN intended for delivery to an external device on said external network, and determining whether the destination port address for said datagram is included in said list of selected process-specific nontranslatable port addresses and, if said destination port address is not included in said list of selected process-specific nontranslatable port addresses, performing normal address translation upon said datagram and passing said datagram to said external network for routing and delivery to said external device;

and if said destination port address is included in said list of selected process-specific nontranslatable port addresses, determining whether said destination port address is bound to a local IP address, and if said destination port address is bound to a local IP address, performing normal address translation upon said datagram and passing said datagram to said external network;

and if said destination port address is not bound to a local IP address, passing said datagram through said NAT gateway without translating said port addresses of said datagram, modifying said source IP address of said datagram to be said external IP address of said NAT gateway, binding said destination port address to the local IP address of said local device and creating an association between said destination port address and the external IP address of said external device, and passing said datagram to said external network for routing and delivery to said external device.

Claim 2:

The NAT gateway of claim 1, wherein the means for delivering a datagram from a local device on said LAN to an external device further comprises a means for determining whether said datagram is encrypted and, if said datagram is encrypted, determining whether the SPI of said datagram is recorded in the SPI - Out field in said internal table and, if said SPI is recorded in said SPI - Out field, modifying the source IP address of said datagram to be said external IP address of said NAT gateway and passing said datagram to said external network for routing and delivery to said external device.

Claim 3:

The NAT gateway of claim 2, further comprising if said SPI is not recorded in said SPI - Out field of said internal table, means for setting the SPI - In field corresponding to the local IP address of said local device equal to zero and setting said SPI - Out field equal to said SPI, modifying said source IP address of said datagram to be said

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external IP address of said NAT gateway and passing said datagram to said external network for routing and delivery to said external device.

Claim 4:

The NAT gateway of claim 1, wherein the NAT gateway further comprises means for delivering a datagram from said external device to said local device by receiving a datagram from said external device on said external network intended for delivery to said local device on said LAN, means for determining whether said datagram is encrypted and, if said datagram is encrypted, determining whether the datagram's SPI is recorded in said SPI - In field of said internal table and, if said SPI is recorded in said SPI - In field, modifying the destination IP address of said datagram to be said local IP address of said local device and passing said datagram to said LAN for routing and delivery to said local device,

and if said SPI is not recorded in said SPI - In field of said internal table, determining whether said SPI - In field corresponding to said IP address of said external device is equal to zero and, if said SPI - In field is not equal to zero, discarding said datagram, and if said SPI - In field is equal to zero, setting said SPI - In field equal to said SPI, modifying the destination IP address of said datagram to be said local IP address of said local device and passing said datagram to said LAN for delivery to said local device,

and if said datagram is not encrypted, determining whether the destination port address for said datagram is included in said list of selected process-specific port nontranslatable addresses and, if said destination port address is not included in said

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list of selected process-specific nontranslatable port addresses, performing normal address translation upon said datagram and passing said datagram to said LAN for delivery to said local device,

and if said destination port address is included in said list of selected process-specific nontranslatable port addresses, determining whether said destination port address is bound to a local IP address, and if said destination port address is not bound to a local IP address, discarding said datagram, and if said destination port address is bound to a local IP address, determining whether said destination port address is associated with the external IP address of said external device, and if said destination port address is associated with the external IP address of said external device, modifying said destination IP address of said datagram to be the bound local IP address of said local device, unbinding said destination port address from said local IP address, and passing said datagram through to said LAN for delivery to said local device.

Claim 5:

The NAT gateway of claim 1, further comprising a timer, wherein, upon receiving a signal that a selected process-specific nontranslatable port address has become bound to an IP address, said timer will commence timing for a predetermined length of time and, upon the expiration of said predetermined length of time, will send a signal causing said selected process-specific nontranslatable port address to become unbound from said IP address, and, upon receiving a signal indicating that said selected process-specific nontranslatable port address has become unbound from said IP

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address prior to the expiration of said predetermined length of time, said timer will stop timing and will reset.

Claim 6:

The NAT gateway of claim 1 in which said external network is the internet.

Claim 7:

The NAT gateway of claim 6 in which said LAN is a virtual private network.

Claim 8:

A method of processing IP datagrams from a local device on a LAN using local IP addresses through a network address translating ("NAT") gateway to an external device on an external network by passing datagrams having process-specific port addresses through said NAT gateway without translating said port addresses, comprising the steps of:

maintaining a plurality of tables associating local IP addresses of local devices on said LAN, external IP addresses of external devices on said external network, port addresses of said local devices, port addresses of said external devices, security parameter index ("SPI") - In values, SPI - Out values, and process-specific port addresses, and a list of selected process-specific port addresses to which datagrams can be passed without translating their port addresses;

receiving a datagram from said LAN;

determining whether the destination port address for said datagram is included in said list of selected process-specific port addresses and, if said destination port address is not included in said list of selected process-specific port addresses, performing

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normal address translation upon said datagram and passing said datagram to said external network for routing and delivery to said external device;

and if said destination port address is included in said list of selected process-specific port addresses, determining whether said destination port address is bound to an IP address, and if said destination port is bound to an IP address, performing normal address translation upon said datagram and passing said datagram to said external network;

and if said destination port address is not bound to an IP address, passing said datagram through said NAT gateway without translating the port addresses in said datagram, modifying said source IP address to be said external IP address for said NAT gateway, binding said destination port address to the local IP address of said local device and creating an association between said destination port address and said external IP address of said external device, and passing said datagram to said external network for routing and delivery to said external device.

Claim 9:

The method of claim 8, further comprising the steps of:

determining whether said datagram is encrypted and, if said datagram is encrypted, determining whether the SPI in said datagram is recorded in the SPI - Out field of one of said plurality of internal tables and, if said SPI is recorded in said SPI - Out field of said internal table, modifying the source IP address to be the external IP address of said NAT gateway and passing said datagram to said external network for routing and delivery to said external device, and if said SPI is not recorded in said SPI -

Out field of said internal table, setting said SPI - Out field corresponding to the IP address of said external device equal to said SPI and setting the SPI - In field of said internal table to zero, modifying said source IP address to be said external IP address of said NAT gateway, and passing said datagram to said external network for routing and delivery to said external device.

Claim 10:

A method of processing IP datagrams from an external device on an external network through a network address translating ("NAT") gateway to a local device on a LAN using local IP addresses, comprising the steps of

maintaining a plurality of tables associating local IP addresses of local devices on said LAN, external IP addresses of external devices on said external network, port addresses of said local devices, port addresses of said external devices, security parameter index ("SPI") - In values, SPI - Out values, and process-specific port addresses, and a list of selected process-specific port addresses;

receiving a datagram from said external network;

determining whether said datagram is encrypted and if said datagram is not encrypted, determining whether the destination port address for said datagram is included in said list of selected process-specific port addresses, and if said destination port address is not included in said list of selected process-specific port addresses, performing normal address translation and passing said datagram to said LAN for routing and delivery to said local device,

and if said destination port address is included in said list of selected process-specific port addresses, determining whether said destination port address is bound to a local IP address, and if said destination port is not bound to a local IP address, discarding said datagram,

and if said destination port address is bound to a local IP address, determining whether said destination port address is associated with the external IP address of said external device, and if said destination port address is associated with said external IP address of said external device, modifying said destination IP address to be the bound local IP address of said local device, unbinding said destination port address from said local IP address, and passing said datagram through said NAT gateway to said LAN for routing and delivery to said local device.

Claim 12:

The method of processing IP datagrams as claimed in claim 8, further comprising the steps of starting a timer whenever a selected process-specific port address becomes bound to said local IP address of said local device,

resetting said timer whenever said destination port address has become released,

and sending a signal whenever said timer is active and a predetermined length of time has expired from the time said timer was started.

Claim 18:

A machine readable storage, having stored thereon a computer program comprising a plurality of code sections executable by a machine for connecting a LAN to

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an external network via a network address translating ("NAT") gateway, said NAT gateway having a local IP address that can be referenced by devices on said LAN and having an external IP address that can be referenced by devices on said external network, and further comprising a plurality of internal tables associating combinations of local IP addresses of local devices on said LAN, external IP addresses of external devices on said external network, source port addresses, destination port addresses, process-specific port addresses, and a list of selected process-specific port addresses including at least port 500, for causing the machine to pass datagrams through without translating port addresses where the port addresses in such datagrams are nontranslatable, said machine performing the steps of:

- processing a datagram from a local device on said LAN by receiving a datagram from a local device on said LAN intended for delivery to an external device on said external network;

- determining whether the destination port address for said datagram is included in said list of selected process-specific port addresses and determining whether said destination port address is bound to a local IP address on said LAN;

- and if said destination port address is not included in said list of selected process-specific port addresses, performing normal address translation upon said datagram and passing said datagram to said external network for routing and delivery to said external device;

- and if said destination port address is included in said list of selected process-specific port addresses, and said destination port address is bound to a local IP

address, performing normal address translation upon said datagram and passing said datagram to said external network;

and if said destination port address is not bound to a local IP address on said LAN, modifying said source IP address of said datagram to be said external IP address of said NAT gateway, binding said destination port address to the local IP address of said local device and creating an association between said destination port address and the external IP address of said external device, and passing said datagram to said external network for routing and delivery to said external device without translating said port addresses of said datagram.

Claim 19:

The NAT gateway of claim 1 wherein said list of selected process-specific nontranslatable port addresses to which datagrams can be passed without translating their port addresses comprises port 500.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ponnoreay Pich whose telephone number is 571-272-7962. The examiner can normally be reached on 9:00am-4:30pm Mon-Fri.

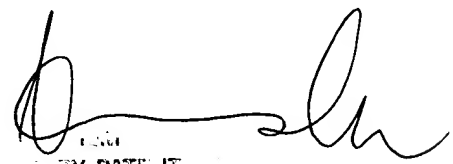
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ponnoreay Pich
Examiner
Art Unit 2135

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